

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PUBLIC MEETING AND COMMENTS ON THE
PREFERRED CITYWIDE REMEDY
QUEENS GATEWAY
JAMIACA, NEW YORK

ADDRESSING POLYCHLORINATED BIPHENYLS (PCBs)
PRESENT IN THE CITY'S SCHOOLS

June 5, 2014

Reported by:
AYDIL M. TORRES
Job no: 11926

1
2 T R A N S C R I P T of the proceedings
3 in the above-entitled matter being taken by
4 AYDIL M. TORRES, a Notary Public of the State
5 of New York, held at the QUEENS GATEWAY,
6 160-20 Goethals Avenue, New York, New York
7 11432.

1
2 PUBLIC MEETING EPA PRESENTER:

3
4 JAMES S. HAKLAR, Ph.D
5 PCB COORDINATOR
6 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
7 REGION 2
8 2890 Woodbridge Avenue, Building 10
9 Edison, New Jersey 08837

10 ALSO PRESENT:

11 GARY HUNT, TRC CORP.
12 SUSAN SCHULZ, EPA
13 MATALIE LONEY, EPA
14 MARK MADADALONI, EPA
15 PAT EVANGELISTA, EPA
16 ROSS J. HOLDEN, SCA
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1 1 (THE PROCEEDING OPENED AT 6:35 P.M.
2 AS FOLLOWS:)

3 MS. LONEY: Good evening
4 everyone. I'm Natalie Loney. I'm
5 with the Environmental Protection
6 Agency. The purpose for tonight's
7 meeting is to present New York City's
8 preferred citywide remedy and the
9 approach in dealing with PCBs in
10 public schools.

11 We will be taking comments this
12 evening, so there is a stenographer
13 present. So after the presentation,
14 if you have any questions, we ask that
15 you go to the microphone to my left,
16 to your right, state your name for the
17 record. Please speak slowly and
18 clearly, so that your words can be
19 recorded.

20 Let me start by introducing the
21 representatives from EPA. In front of
22 me is Jim Haklar, next to Jim is Mark
23 Maddaloni, Pat Evangelista, and Susan
24 Schulz. In addition, we have Gary
25 Hunt from TRC he is -- Gary is a

1 consultant for New York City who will
2 be doing a portion of the
3 presentation. For those -- and I'm
4 saying this in English, so some of you
5 may or may not understand, for those
6 who are Spanish speakers, we also have
7 a translator who will provide
8 instantaneous translation, so if you
9 have challenges with English, you can
10 sit right next to him and he will
11 explain everything as the evening goes
12 on. So I'm going to turn the mic over
13 to Jim now again. I do ask that all
14 of you turn off your cell phones or
15 put them on vibrate.

16 All right, so I'll be back after
17 the presentation to start taking the
18 questions and answers. Thank you.

19 MR. HAKLAR: Thank you.
20 Welcome, welcome, again, everybody.
21 If we can get the slide. Next slide.
22 Okay. So let's start this. We are
23 here for two main reasons. Actually,
24 one main reason. The main reason 1,
25 to take your comments on New York City

1 Plans to address PCBs in its schools.
2 And there are two ways that you can
3 send us your comments. The first way
4 is to mail them to me at this address
5 or you can e-mail them
6 to PCBsPreferredRemedy.Region2@epa.gov
7 , and I will get them.

8 Next slide, please.

9 So let's talk a little bit about
10 what PCBs are and why they're an
11 issue. PCBs are manmade chemicals.
12 They were manufactured in the United
13 States from about the 1930s to late
14 70s, and they were considered, like a
15 magic chemical because they had very
16 valuable properties. They were good
17 for use in electrical components.
18 They were good for building materials.
19 For example, in buildings that have
20 window caulk, they made the caulk
21 flexible, and really made it last a
22 long, long time. They had these good,
23 good properties, but they are also
24 hazardous and potentially
25 cancer-causing, and because of the

1 potential health effects, EPA and
2 Congress banned the manufacturing of
3 PCBs in the late 1970s.

4 Next slide, please.

5 So how do we get to the point
6 where we are dealing with PCBs in New
7 York City schools? Probably about,
8 about, I would say, around seven years
9 ago or so several individuals were --
10 started collecting samples of building
11 caulk from a number of New York City
12 schools. They had that caulk analyzed
13 for PCBs. What they did was they
14 provided the sample results to EPA and
15 they also provided it to the New York
16 Daily News. When we saw the levels,
17 we realized that there was an issue
18 here and we entered into discussions
19 with New York City, and those
20 discussions resulted in an agreement,
21 or a formal agreement, which we call a
22 consent order, which, which -- under
23 which New York City is addressing the
24 PCBs.

25 Next slide, please.

1 Okay, so let me just talk a
2 little bit about this agreement with
3 New York City. It's about four and a
4 half years old. It requires the City
5 to perform a study of the PCBs in five
6 pilot schools or five older schools
7 which we call "pilot schools." These
8 are older schools that had PCBs in
9 their building materials. And based
10 on the results of the study, which we
11 call a "pilot study," New York City
12 prepared a report which includes their
13 recommended citywide approach to deal
14 with PCBs, and that recommended
15 approach is what we call a "preferred
16 citywide remedy."

17 Next slide, please.

18 All right, now I'm going to give
19 it over to Gary Hunt, and he's going
20 to talk a little, a little bit more
21 about the study they did.

22 MR. HUNT: Thank you, Jim.

23 Good evening, everyone. Thank
24 you for coming. I am Gary Hunt,
25 principal and vice president with TRC

1 Corporation. We are the consulting
2 engineering firm that's working for
3 the school construction, Department of
4 Education, and documenting the pilot
5 study that was agreed to in the
6 consent agreement and final order.

7 I am going to be talking to you
8 tonight about what was done in the
9 pilot study, some of the findings, and
10 some of what the plans are moving
11 forward.

12 There goes the slide. Okay.
13 Thank you.

14 We're going to talk about the
15 pilot study for PCBs in caulk,
16 preferred citywide remedy for all the
17 schools which the ultimate objective
18 of the program is to come up with
19 that, and some of the plans for
20 long-term monitoring.

21 Next slide.

22 As Jim pointed out, PCBs were
23 manufactured first in 1925, and ended
24 in 1978, with the onset of the Toxic
25 Substances Control Act, which was

1 actually legislation that was put in
2 place to deal with PCBs at the time.
3 1.4 million pounds were produced by
4 Sailien (phonetic) Corporation. The
5 majority of the PCBs were used for
6 light transporters, capacitors. A
7 small percentage, actually, are found
8 in clay in building and construction
9 materials. Beginning in 1950, caulk
10 containing PCBs was used in
11 constructing and renovating buildings,
12 really throughout the entire country,
13 and probably throughout the world.
14 This is a problem, not just in the
15 U.S. but other countries. Congress
16 passed legislation on PCB in 1978, as
17 I said, with the onset of the Toxic
18 Substances Control Act. And then in
19 September of 2009, USCPA issued first
20 guidance on how to deal with PCBs,
21 particularly in the caulk.

22 Next slide.

23 In January of 2010, the City of
24 New York and the USCPA entered into an
25 agreement, a consent agreement, final

1 order, that basically laid out what
2 would be done to investigate the
3 severity of this problem in the pilot
4 schools that are being selected, and
5 come up with, ultimately, the
6 preferred citywide remedy. I should
7 say, this doesn't mean this is the
8 only urban area in the country that
9 they have this problem. I think other
10 people haven't looked at it to the
11 extent that the City of New York and
12 USCPA has.

13 Next slide.

14 What was done was, various
15 remedial alternatives were looked at.
16 We've done five pilots. I will show
17 you those in a minute, that were
18 selected for the study. Encapsulation
19 of caulk. Caulk is the material
20 around, you know, windows or masonry
21 work and it did contain PCB that was
22 applied at the time the caulk was
23 applied, and the original purpose of
24 this real program in this consent
25 agreement was to look at caulk and

1 PCBs, and PCB in caulk, and EPA
2 guidance, and in 2009, we primarily
3 focused on that as well.
4 Encapsulation of caulk, which was
5 putting a coating of material on the
6 caulking so that the PCB cannot
7 migrate out of the caulk, cannot leave
8 the caulk, kind of like a special
9 paint, special coating. Removal and
10 replacing of the caulk. Take the
11 caulk out, put new caulk in, patch and
12 repair, more particularly if its
13 cracked or deteriorated, remedial
14 alternative, removal of windows that
15 had PCB caulk, exterior, interior
16 caulk around the window casing. Then
17 there's removal of light fixtures with
18 PCB ballast. During the course of the
19 first phase of this program, ballast
20 had not really been identified as a
21 potential source, and when it became
22 apparent that they were, we then
23 aggressively started looking at
24 ballast and their potential
25 contribution to the air problem.

1 Next slide.

2 Here are the schools that were
3 selected for the pilot programs and
4 what remedial alternatives were
5 deployed in each of these locations.
6 P.S. 170X, 176X, actual repair, PCB
7 remedial alternative, P.S. 199,
8 removal and replacement of PCB caulk,
9 and P.S. 309K, the actual coating of
10 the caulk, again, coating you put on
11 the caulking material to inhibit the
12 PCBs from migrating out. P.S. 3R,
13 removal of ballast, removal -- P.S.
14 182, window replacement. But,
15 ultimately, ballast were removed in
16 all five of the schools and as I will
17 show you in a moment, it's a very
18 aggressive program in right now to
19 remove all ballast from New York City
20 schools that contain PCBs.

21 Next slide.

22 As part of these evaluating
23 alternatives, before the remedial
24 alternative was put into place -- and
25 samples were pre and post. Remedial

1 PCB testing in air, dust, surface,
2 dust, and the soil on the exterior of
3 the building. Post-remedial PCB air,
4 dust sampling from the same location.
5 In other words, you look at the same
6 location, so there's validity of
7 variables, you wipe the same surface
8 down after it's been cleaned and
9 before it's been cleaned, for example.

10 Next slide.

11 There were 430 dust samples
12 taken pre and post in the pilot
13 schools throughout the course of the
14 study. With the exception of one, all
15 of those were found to be below EPA
16 guidance level, which for surface dust
17 is 10 micrograms per 100 centimeter
18 squared. Again, that is a fairly
19 small concentration, for those of you
20 not familiar with scientific notation.
21 And what we concluded from this, this
22 is one location we resampled, we found
23 density below the guidance level. And
24 what we concluded, practices that are
25 employed in the city schools to remove

1 dust, surface dust, and dust in
2 building were performing satisfactory.
3 So, in other words, it doesn't appear
4 that the dust in the schools are
5 contributing to the PCB issues.

6 Next slide.

7 Air samples. We took 1100 air
8 samples. Again pre, post remedial
9 measures in the five schools, and what
10 we found was that the most significant
11 reductions in indoor air
12 concentrations were associated with
13 the removal of ballast, which became
14 actually one of the primary sources,
15 if not, the primary source, in
16 addition to the caulk, and that was
17 something that was developed during
18 the course of the program. That was
19 not initially part of the program, to
20 remove ballast or to remove ballast as
21 a contributing factor.

22 Next slide.

23 Discussion of findings. In this
24 first bullet. I did a study when I
25 went to graduate school, Rutgers

1 University, on PCB in a population, so
2 this is not a new problem, and it is
3 complicated. It's not like lead or
4 asbestos. You are dealing with 209
5 individual chemical compounds. I
6 don't mean to bore you with that, but
7 it's very complex chemistry that's
8 going on here, and they behave very
9 differently. The light fixtures
10 should be addressed first, that's
11 true, and the City is doing that. We
12 will show you in the next slide how to
13 identify and remove any ballast that
14 contain PCBs and capacitors that are
15 in light fixtures. PCBs in caulk is
16 very complicated to deal with. There
17 is no magic one solution, no silver
18 bullet. It needs to be managed and
19 assessed on an ongoing basis and that
20 is taking place. PCBs may also be
21 present in other building material,
22 secondary sources, for example, not
23 exclusive caulk or exclusively
24 ballast, and more research is needed.
25 I know people hate to hear and see

1 that but this problem still needs
2 research to resolve what needs to be
3 done.

4 Next slide.

5 With respect to the ballast
6 removal program, 238 schools within
7 the city's population have been
8 identified as having the T12 light
9 fixtures that contain are known to
10 contain PCB ballast in their
11 capacitors, and capacitors are small
12 electrical components within the light
13 fixtures. 173 schools are actively
14 being removed as we speak, and a
15 completion date of August or December
16 31, 2016.

17 Next slide.

18 The remedy so far, based upon
19 the date resulted in the remedy that
20 has been prepared by the City, will
21 happen in working with TRC. The light
22 fixture removal program is very
23 prominent, very important, as I showed
24 you in the past slide. A very
25 aggressive program is in place to

1 remove those ballast that we know
2 contribute to indoor air
3 concentrations of PCBs. There is a
4 protocol to inspect and respond to
5 ballast events, ballast failure, for
6 example. Implement best management
7 practices, which include inspection
8 and remediation of caulk as necessary
9 to remove, replace, patch, repair as
10 needed, and encapsulation, which has
11 limited success. We will continue to
12 investigate that, maintain, and
13 inspect all ventilation systems, which
14 is very important, the air exchange
15 that takes place in a room,
16 transferring PCBs that may be present
17 in the room. Capital improvement
18 projects. If there is a capital
19 improvement project in any school, the
20 part will be removed in combination
21 with those affected parts of the
22 building, and evaluate and excavate
23 soils within any capital improvement
24 projects. There is a guideline to
25 what is acceptable contamination in

1 exterior soils. Long-term monitoring
2 program to continue in the pilot
3 schools. I will show you that in a
4 minute. We have identified some
5 additional studies in concert with EPA
6 that should be conducted to help us
7 remedy this problem.

8 Next slide.

9 The long-term monitoring
10 program. We continue to do air
11 sampling in pilot schools during
12 heating season and non-heating
13 seasons, continue to take bulk samples
14 of remediated caulk. We continue to
15 take samples of the encapsulated caulk
16 to see over time if PCBs reappear and
17 to what extent.

18 I think that's it.

19 Back to you, James.

20 MR. HAKLAR: Okay. So the way
21 the pilot study works, the fieldwork
22 was completed. New York City prepared
23 the report. So what did we do next?
24 Well, under our consent agreement with
25 New York City, the agreement required

1 EPA to conduct what's called a "peer
2 review," and you got to think of the
3 peer review as if you were writing --
4 let's say you were writing a letter,
5 and you wanted an impartial person to
6 take a look at it to make sure there
7 were no mistakes or errors and,
8 basically, that's what we did. We had
9 technical experts review what the City
10 did. The agreement also required EPA
11 to hold a public meeting, and that's
12 what we are doing tonight, and what we
13 are doing through next week.

14 Next slide.

15 So let's talk a little bit about
16 the peer review. The peer review was
17 independent, and what I mean by
18 "independent," EPA had a consultant
19 manage the actual review. We had no
20 direct contact with the actual peer
21 reviewers. There were three peer
22 reviewers. Two of them were from
23 private industry, the environmental
24 field, and the third one was from a
25 University in the Northeast, and EPA

1 provided -- we provided the
2 consultants with a series of questions
3 for the peer reviewers to answer, and
4 these questions were also shared with
5 New York City before we provided them
6 to the peer reviewers, so we can get
7 the City's input as well.

8 Next slide, please.

9 Once the peer reviewers did what
10 they had to do, the EPA's consultants
11 assembled the various responses into a
12 single report, which is called "the
13 peer review report." And EPA, after
14 reviewing the peer review report,
15 prepared our own document which
16 summarizes our perspectives on the
17 peer review. Both of those documents
18 can be found at this website, and I
19 would also like to say that, in fact,
20 this presentation can also be found at
21 this website for those that are
22 interested.

23 Next slide. All right.

24 So what are the major findings
25 of the peer review? In general, the

1 peer reviewers believed that the
2 City's report is comprehensive and
3 that appropriate methods were used
4 during the investigation of the PCBs
5 with the fieldwork.

6 Next slide.

7 One of the questions that we
8 asked the peer reviewers to look at
9 dealt with what we called "the city's
10 reoccupancy protocol." A lot of the
11 school buildings have old light
12 fixtures. These light fixtures have
13 electrical components called ballast
14 and those ballast over time can fail,
15 and if they fail, they can release
16 smoke, and when that happens, the City
17 has an established protocol for
18 dealing with that situation, and it
19 basically involves evacuating the area
20 where the ballast failure occurred,
21 notifying the appropriate parties,
22 ventilating the area, and cleaning the
23 area as needed, and then performing
24 what we call -- what we call
25 "clearance testing," and the City's

1 clearance testing consists of what's
2 known as wipe samples, where they will
3 take a gauze and wipe it over a
4 surface to see if there's any PCBs,
5 and they would send that gauze to a
6 laboratory for analysis. And what the
7 peer reviewer -- what some of the peer
8 reviewers believed, was that wiped
9 samples alone for clearance testing
10 was not adequate.

11 Next slide.

12 We also asked the peer reviewers
13 to look at other approaches for
14 addressing PCBs in caulk. One of the
15 things that you have to realize is
16 that PCBs can be very mobile. If
17 they're in caulk that's in contact
18 with masonry or some porous material,
19 the PCB can move from the caulk into
20 the porous material. PCB can also
21 move from the caulk into the air, and
22 what EPA's Office of Research and
23 Development found was that -- was that
24 the main route that people in
25 buildings can get exposed to PCBs is

1 through inhaling the PCBs in the air.

2 Next slide.

3 We also --- we also wanted the
4 peer reviewers to provide us with some
5 ideas on prioritizing schools to
6 address PCBs. The issue was, do you
7 deal with PCBs during the normal
8 course of construction or do you go
9 out and proactively deal with the PCBs
10 in the schools? And some of the peer
11 reviewers believed that proactively
12 addressing PCBs would significantly
13 reduce exposure, and all three peer
14 reviewers believed that air sampling
15 would be an effective component for
16 prioritizing the schools.

17 Next slide.

18 We also -- we also tasked the
19 peer reviewers to consider
20 ventilation. Ventilation is a very
21 important component of this issue.
22 The peer reviewers recommended that
23 ventilation be optimal, it be the best
24 it can be to minimize the level of the
25 PCB in the air. Not only would that

1 reduce levels of the PCB in the air,
2 that would have side benefits dealing
3 with mold, things like that, and it's
4 also important because a lot of the
5 older school's ventilation systems
6 were constructed or designed to
7 operate properly with the windows
8 open, and through -- and over the
9 years, with the course of window
10 designs changing, newer windows, a lot
11 of the newer windows you can't open,
12 and if the windows -- if the windows
13 are replaced with windows that can't
14 open then that -- then that affects
15 how well the ventilation system can
16 operate.

17 Next slide.

18 We also ask the peer reviewers
19 to look at what we call housekeeping
20 or best management practices. A
21 number of slides ago I mentioned that
22 PCBs were placed in caulk to make it
23 flexible. Well, if you -- if you were
24 to look at that PCBs in caulk that's
25 40 to 30 years old, actually 40 to 50

1 years old, you could, in a lot of
2 cases, think that this was applied
3 last month because it was -- it still
4 maintains its flexibility and
5 properties. We asked the peer
6 reviewers, should New York City be
7 focusing on flexible caulk or intact
8 caulk? Should they be looking at
9 deteriorating caulk or both or
10 something -- somewhat of a
11 combination, and the peer reviewers
12 weren't consistent in their answer.
13 So some, some focus on the intact
14 caulk, look at both, so the responses
15 were varied.

16 Next slide.

17 We also wanted the peer
18 reviewers to consider soil outside of
19 the schools. We believe that from
20 older construction practices at
21 schools, the soil could have been
22 contaminated with PCBs from little
23 bits and pieces of PCB caulk getting
24 into the soil and -- but the peer
25 reviewers did not believe that going

1 out and proactively evaluating the
2 soil would significantly reduce
3 exposure. And the reason for that is,
4 again, the primary way for an
5 individual to get exposed to PCB in
6 the building is through the air,
7 inhaling the PCBs.

8 Next slide.

9 What's our next step? EPA is
10 taking your comments until June 30th
11 and based -- and on those comments and
12 the peer reviewers responses, and this
13 is all outlined in our agreement with
14 the City, we may incorporate revisions
15 to the City's preferred citywide
16 remedy.

17 Next slide.

18 The City's preferred citywide
19 remedy -- along with Gary's slide, he
20 mentioned additional research. The
21 preferred citywide remedy did
22 acknowledge that there were
23 information gaps, and after discussion
24 with the City, the EPA recommended two
25 areas for future research. First one

1 is to test different sampling methods
2 for indoor caulk to really see what's
3 -- what's going on in the schools, and
4 the second one is really to really
5 refine or pin down how much PCB does
6 the caulk contribute to the indoor
7 air. We know that the light fixtures
8 contribute -- were a significant
9 source. Were they the greatest
10 source? EPA doesn't know. We don't
11 know yet. We need -- there is a need
12 to figure out what the contributions
13 from other sources in the -- in the
14 school -- in the building materials
15 are.

16 Next slide.

17 So what I want to do, I just
18 want to start wrapping up with some
19 points to remember. A lot of work was
20 done under the pilot study. A lot of
21 good scientific work. We have a
22 better understanding of where PCBs
23 could be found in a school. And just
24 going back to what I said just a few
25 minutes ago, by removing

1 PCB-contaminated light fixtures, New
2 York City did address a major source
3 of PCBs. There could be others, but,
4 but with regard to the light fixtures,
5 they're addressing this major source,
6 and your comments really do matter.

7 Next slide.

8 And this is just recapping. On
9 the top we have the City's preferred
10 citywide remedy, and again, just
11 please, if you have comments, you can
12 send them to me by regular mail at
13 this address, or use the e-mail
14 address. And I think at this time, we
15 are ready for comments or questions.

16 MS. LONEY: Let me turn on the
17 other mic.

18 We are going to open up the
19 floor for questions and answers right
20 now, so if you have a question, we're
21 going to ask that you come down to the
22 mic, or if you prefer, don't want to
23 walk all this great distance, I can
24 bring the mic to you. The only thing
25 that I do ask is that you state your

1 name for the record and speak clearly.

2 Don't all rush down at once.

3 Yes?

4 MS. SHEPARD: Hi, Laura Shepard,
5 reporter for the Queens Chronicle. I
6 was just wondering exactly what health
7 concerns that students who have
8 attended or currently attend any of
9 these schools should look for, worry
10 about?

11 MR. HAKLAR: For that I'm going
12 to hand the mic back over to Mark
13 Maddaloni.

14 MR. MADDALONI: Thank you. I am
15 Mark Maddaloni. EPA regional office.
16 PCBs have been known to cause a whole
17 host of adverse health effects. The
18 studies in animals are more prevalent.
19 There is also what we call observation
20 of studies in human epidemiologies has
21 established this. We believe that our
22 exposure guidelines are set at levels
23 that are well below exposure effect
24 levels. In fact, we estimate the
25 exposure guidelines to have a safety

1 factor of about 300, so we establish
2 an effect level in an annual time
3 frame because the simple etiology
4 wasn't strong enough to develop a
5 robust response relationship, so based
6 on a good animal model, primate model,
7 actually, we set our exposure
8 guidelines 300 times below that so
9 we're not expecting to find effects
10 per se at or below the exposure
11 guidelines. I think our concern is
12 when you exceed those exposure
13 guidelines you begin to chip away at
14 that margin of safety that we are all
15 granted as little as -- it's very
16 important that we maintain those
17 exposure, exposure levels below our
18 exposure guideline.

19 MS. LONEY: Additional
20 questions?

21 MS. SHEPARD: If you're not
22 really examining the soil, do you give
23 any guidelines to schools that
24 encourage, you know, kids to plant
25 gardens outside or anything?

1 MR. HAKLAR: Well, if there was
2 any, any possibility or any indication
3 from the records where the school was
4 constructed that there could possibly
5 be PCBs, it was built during the time
6 PCBs and building materials were used,
7 we would suggest, use prudent
8 measures, you know, or contact the
9 school construction authority to get
10 additional details and guidance.
11 Plus, you guys want to say anything?

12 MS. LONEY: Hi.

13 MS. BERRY: Jessica Berry.

14 Maybe you already addressed it,
15 I may have missed it. What event took
16 place that started the research and
17 process of looking into PCBs? Was
18 there an incident that took place?
19 Was it just a hunch that you guys had
20 that there were PCBs?

21 MR. HAKLAR: Well, what happened
22 was that it -- actually, it started
23 not in New York City but in another
24 school, and there was an individual
25 that was a contractor, not in this

1 area, but in another area of the
2 country that used to apply PCB caulk
3 to buildings. He would bring it in
4 containers. One would be the caulk,
5 the other container would be the PCBs,
6 and he would fix them on-site. So he
7 was very knowledgeable, and so we
8 heard about the issue of the PCBs, but
9 there were -- there was a small group
10 of individuals who would go to
11 different schools, and they would walk
12 up to the school and pull off the
13 piece of a building caulk, and take
14 that caulk and have it -- run it --
15 give it to a lab for analysis, and
16 that's how we really found, found that
17 it could be in New York City schools.

18 MS. LONEY: Any follow-up
19 questions?

20 MS. SHEPARD: Last question, are
21 there any issues that are specific to
22 Queens schools?

23 MR. HAKLAR: I'm just thinking.
24 Give me a moment. There are schools
25 that we are aware of that had light

1 fixture ballast failures, aside -- and
2 there are Queens schools that we have
3 -- we dealt with the City in approving
4 cleaning up plans for its soil, but
5 aside from that, I am unaware of any
6 specific.

7 MR. EVANGELISTA: They are part
8 of the 700.

9 MR. HAKLAR: Right, they're part
10 of the 6, 700 schools throughout the
11 city that could potentially have PCB
12 issues.

13 MS. GIORGI: Christina Giorgi, I
14 don't -- I have made extensive
15 statements at the previous meeting,
16 but I have a question for you, Jim,
17 and isn't it true that based on these
18 studies that have been done today, we
19 really don't know how serious the
20 problem is with regard to the health
21 risks to the staff and students.

22 MR. HAKLAR: There is -- we know
23 a lot and there is still information
24 that can be -- that can be gathered.
25 We do -- we have recommended to the

1 City that air testing be performed
2 after a light fixture failure, and
3 suggested that it be included as we go
4 forward working with the City
5 prioritization team, since the rest --
6 since the route of exposure is through
7 the air, that would be a -- that would
8 be a beneficial component.

9 Mark, would you like to...

10 MR. MADDALONI: I think it needs
11 to be emphasized, the exposure that
12 the -- the inhalation pathway, so
13 that's where the lion's share of our
14 concern lies and the best way to
15 determine how much exposure is
16 occurring through the inhalation
17 pathway is to build indoor air
18 sampling and so we believe the City
19 has a good program. We also believe
20 that if they added indoor air
21 sampling, it would be a great program.

22 MS. GIORGI: I have a follow-up
23 question. Thank you, I appreciate
24 that very much.

25 The recommendation is that the

1 EPA make the indoor testing. Would
2 you recommend that that testing be
3 done with the windows closed, in
4 addition to the windows open, or does
5 EPA take the position that it is
6 adequate to test the air when outdoor
7 air is introduced into indoor
8 classrooms, particularly, given the
9 reality that there are many classrooms
10 where the windows are closed, where
11 children are attending school with the
12 windows closed currently?

13 MR. MADDALONI: It's a good
14 question. I don't know that any
15 single sampling protocol is going to
16 satisfy every, every conceivable
17 condition. It won't because there is
18 just too many of them. So we're
19 aiming for the meaty part of the curve
20 and that's, I think, the appropriate
21 thing to do, what's most common, and I
22 believe that the sampling that has
23 been done is reasonably representative
24 of the way that schools operate for
25 the most part. More closed in the

1 winter, somewhat more ventilated in
2 warmer months. There is -- we
3 discussed this Tuesday, and at
4 Stuyvesant, with the degree of
5 ventilation, and I said, reasonable
6 people could differ and debate what is
7 a most likely scenario. Again, we're
8 not looking for the absolute worse
9 case here because that's what's done
10 under this screening, to see if you
11 have a problem to begin with. We
12 already know that there is a problem.
13 I think it's reasonable. I was doing
14 some of my own research and I have it
15 right on my cell phone. It's an
16 engineering website, one that
17 recommended air exchange rates for
18 buildings. For schools 4 to 12
19 exchange an hour. That's what an
20 engineering field recommends. That's
21 a lot. And it's by no means the
22 highest. You have numbers for bars.
23 I'm sure. I'm sure casinos are
24 higher. They want to keep people
25 awake, so they can gamble. In a

1 minimum of 4 is recommended for even
2 the most -- how should I say stagnant
3 type of building. So I think real
4 life conditions indicate that we have
5 -- we have to conduct these studies
6 with an average, average time frame
7 and that's not negligible, so I think
8 that's the best way I can answer that
9 question.

10 MR. HAKLAR: I would also like
11 to add, the people that weren't
12 present at the other public meetings,
13 a lot of the older schools have for
14 their ventilation system, it really
15 isn't a true ventilation system. It's
16 an exhaust system. There are fans up
17 on the roof, and what they do, they
18 pull air through, and for them to
19 properly operate, they have to get the
20 air from somewhere and what -- for it
21 to properly operate, they have to have
22 the windows cracked open for a certain
23 extent. We saw this at one school
24 where the windows were closed when the
25 City was sampling, and we tried to

1 open the door to the outside, and the
2 difference in pressure because -- it
3 blew the students artwork all over the
4 place. So they need the windows open
5 to a certain extent.

6 MS. LADY: Mr. Maddaloni, can
7 you go over the health effects of PCBs
8 and also which symptoms would raise a
9 red flag for you as a problem with
10 PCB?

11 MR. MADDALONI: I don't know how
12 to answer that. That's a challenging
13 question. So they have been
14 implicated in reproductive
15 developmental outcome, and effects on
16 immune system, depression of the
17 immune system, effects on the nervous
18 system, reductions, and cognitive
19 functions, liver, kidney toxicity, and
20 they are deemed to be by the United
21 States Environmental, a possible
22 carcinogen. The evidence in humans is
23 inconclusive. Animal models have
24 demonstrated certain types of cancers,
25 so as I said before, from most these

1 studies in animal models, we
2 identified what's called a lowest
3 observed adverse effect level, and
4 that was an effect on the immune
5 system. It was the most sensitive
6 outcome and we found that level, and
7 then added safety factors through a
8 standard mechanism. We didn't pull
9 them out of a hat, and I will try to
10 go through them very briefly. We are
11 working with an animal model and we
12 added a factor of 10, safety factor of
13 10, just going from animals to humans
14 because we didn't have the human data.
15 We added another factor of 10, just to
16 account for human variability. We
17 know not everyone is alike. And then
18 there was just an additional factor of
19 3, which is called a general
20 uncertainty factor, 3 times 10, times
21 10, that's the 300 safety factors that
22 we operate with. So it's -- it's a
23 question of toxicology that -- I was
24 just down at a meeting in our
25 research, Triangle Park, North

1 Carolina facility, and one of the
2 burning areas of interest that we are
3 trying to better understand is what
4 happens at levels above the exposure
5 guidelines. At what point could you
6 begin to see effects when you are
7 below the observed effect level?
8 There may be some more subtle effects
9 that we can't or we don't have the
10 tools to currently observe. We're
11 working on them. I can't give you a
12 clear concise answer to that, at what
13 point the effects occur. We are very
14 concerned that -- again, we have
15 standard risk assessment procedures.
16 We have set exposure guidelines. When
17 we exceed those guidelines, that sends
18 up a flag. That's the flag. It
19 doesn't mean that they're effects. It
20 means that people are not being --
21 they're not having the benefit of the
22 level of safety that we would like to
23 see applied across the board. Okay,
24 so when those levels exceed those
25 guidelines, it does not mean an effect

1 will occur. Anyone that knows me,
2 knows I'm one to say, one exceed does
3 not a hazard make. I will be the last
4 one to say that any one reading that
5 exceeding our exposure guideline would
6 result in an effect. If I believed
7 that, I would have long since
8 recommended the evacuation of schools.
9 I don't think it's appropriate, but I
10 think we need to do everything -- I
11 think everyone in this room agrees
12 that we need to do everything
13 reasonable to keep exposure as low as
14 possible, and we believe that indoor
15 air sampling will better inform that
16 process.

17 MS. LADY: Follow-up questions.
18 Has there ever been any sort of health
19 complaint in New York City?

20 MR. MADDALONI: There's lots of
21 complaints in New York City.

22 MS. LADY: No, no. In regards
23 to PCBs or linked PCB exposures?

24 MR. MADDALONI: Not that I know
25 of, and my colleague reminded me, one

1 of the things also about PCBs is they
2 cause chronic health effects. Cancer,
3 things like -- and it's very hard to
4 measure. We would need a population,
5 literally of millions, in order to
6 maybe identify excess lifetime cancer
7 cases with statistical confidence. So
8 it's not something you can easily
9 identify. We do it more
10 theoretically. So PCBs have very low
11 acute toxicity and immediate toxicity,
12 so it is really the long-term, the
13 recurring exposure, and that's why we
14 have been insistent that the City
15 maintain its long-term levels below
16 our exposure guidelines.

17 MS. LADY: One more, I promise.

18 So, actually, let me -- how can
19 I phrase this so it doesn't sound too
20 bad? At what -- obviously, we
21 discussed the peer reviewers and you
22 discussed the indoor air sampling.
23 What happens if you test the air
24 indoors and there is a problem and
25 what is the remedy?

1 MR. MADDALONI: Well, there has
2 been a perfect track record of that at
3 P.S. 199, where the initial air
4 sampling was quite high and over a
5 number of subsequent steps, it didn't
6 all happen at once. The removal of
7 the light fixtures has been
8 articulated here, had a huge impact on
9 reducing the indoor air levels,
10 treating the caulk in various types of
11 ways. Either removing it,
12 encapsulating it, has had an effect.
13 Increasing ventilation has a huge
14 effect. And, finally, they also used
15 air filtration at P.S. 199. So it was
16 a combination of actions that in that
17 case were necessary in order to reduce
18 levels to an acceptable range.

19 MS. LADY: You have --
20 obviously, we don't know how long this
21 has been going on for, correct?

22 MR. MADDALONI: That is correct.
23 In the 1960s.

24 MS. LADY: Do you do a model
25 back to find out what the levels are

1 at that point and exposure, and also
2 at what point or not at what point --
3 how long does it take to become ill
4 and at what level?

5 MR. MADDALONI: I don't think we
6 can do that kind of modeling, what we
7 call "gross reconstruction." A lot of
8 exposure that we are most concerned
9 with now is coming from ballast that
10 have failed. Obviously, when they
11 were put in in the '60s, they hadn't
12 failed. They were well -- in very
13 well-contained systems, as was
14 intended. The caulk is just -- again,
15 it's hard to determine what the rates
16 were 40, 50 years ago. That kind of
17 gross reconstruction would have such
18 incredible uncertainty attached to it,
19 I don't think it would be useful, and
20 again, as far as effects, yes, the
21 longer you are exposed, the greater
22 your risk. So we recognize that some
23 students, teachers, staff may have
24 been exposed for some time. So that
25 is why it is so important to reduce

1 the level of exposure to as low as
2 possible.

3 MS. LADY: Thank you.

4 MS. GIORGI: Christina Giorgi
5 again.

6 MR. MADDALONI: How did I get
7 the mic?

8 MS. GIORGI: First, I guess this
9 may be more of a statement than a
10 question. It's my understanding that,
11 you know, you made -- you said this
12 several times, that the removal of the
13 PCB light fixtures inside is reducing
14 air concentration, and it's really
15 hard to even say this question because
16 I was really involved in, you know,
17 getting removal, and I feel very good
18 about what we accomplished with that,
19 but from my review of the actual
20 studies, there are instances where it
21 wasn't -- you can't really make that
22 direct of a link and you are -- cases
23 where you removed the light fixtures,
24 and it didn't go down, and it seems to
25 be that it's more introduction of

1 outside air that influence the
2 reduction. So I guess I'm not quite
3 sure what the EPA study definitively
4 says about the fact that it resulted
5 in a reduction. That's the first
6 question I have. And the second is,
7 have we done an inventory of the
8 schools that are on the list to have
9 the lights removed by 2016, and ensure
10 the ventilation systems are working or
11 that the windows are open?

12 MR. HAKLAR: Let me clarify, I
13 guess, as far as your first comment.
14 What I said during my presentation was
15 that the removal of light fixtures
16 represented a major source of PCB.
17 They absolutely are removing
18 significant amounts of PCBs from the
19 schools. Are they removing all of
20 them? Probably not. They're still --
21 there could be PCBs in the caulk,
22 there could be PCBs in paint, there
23 could be PCBs in other building
24 material. The removal of those
25 fixtures is an extremely important

1 step. Regarding an inventory of the
2 schools, could you just restate your
3 question, please? I just want to make
4 sure that I respond properly,
5 Christina.

6 MS. GIORGI: I should just stay
7 here, I guess.

8 What I was hearing before was
9 that it was the removal of light
10 fixtures that reduced the air
11 concentration of PCBs, not reducing
12 the amount of PCBs, and clearly you
13 know there is tons of PCB
14 contributions, and that a lot that
15 removed ballast, that's not what I
16 heard articulated in terms of this. I
17 am sitting here listening in and I am
18 hearing this, you know, we can
19 introduce the recommended air
20 exchanges, making out at bar levels
21 but, you know, it's, you know, a
22 setting for a school, where we have an
23 operating system. We can get EPA to
24 get the air levels to acceptable
25 ranges, and I know from the ballast

1 that we saw in litigation, you had
2 some schools that had nearly 100
3 percent of the light fixtures leaking,
4 and I appreciate there's no way we can
5 have them all done tomorrow but to get
6 them removed very quickly and am very
7 grateful for their efforts. I guess I
8 would just raise the question, you
9 know, given the value that EPA and, I
10 think, SCA places on introduction of
11 outside air, what inventory has been
12 done to ensure that those schools that
13 still have these lights have the
14 appropriate ventilation now?

15 MR. HAKLAR: Okay, I am going to
16 have to defer to the City.

17 MR. HOLDEN: I don't have a
18 comment on that.

19 MR. HAKLAR: You have to
20 realize, in terms of dealing with the
21 schools, we are still -- there are
22 still discussions that we need to have
23 with the City in terms of how to deal
24 with all the schools. You have
25 hundreds of schools that could

1 potentially have PCB, so we don't have
2 a prioritization at the moment.
3 That's what we have to have future
4 discussions with the City on. In
5 terms of ventilation, yes, ventilation
6 is an important component, but it's a
7 component of what we would -- of what
8 we would consider a multi-approach,
9 whether that includes the
10 housekeeping, the best management
11 practices that the City is doing,
12 whether it includes one of the
13 alternatives that the City studied.
14 It's -- it's just -- it's understood
15 that there are potentially a lot of
16 schools, and to have the ventilation
17 system operating at 100 percent all
18 the time, you know, may or may not
19 occur, but the ventilation is one
20 component of a multicomponent
21 approach.

22 MS. LONEY: Are there any
23 further questions?

24 MS. SHEPARD: I was just
25 wondering, how much did the pilot

1 study cost and how much is the City
2 spending on the remediation?

3 MR. HAKLAR: The pilot study was
4 -- the actual costs were incurred by
5 the City. The City, the City really
6 spent for that. I'm going to have to
7 defer to the City.

8 MR. HOLDEN: I don't have an
9 exact number of what we have spent on
10 the pilot program. Certainly in-house
11 resources, we have had the labs, we
12 have sent many, many samples all as
13 part of the pilot program. 10 -- we
14 are talking millions of dollars over
15 the last several years. But we are
16 still, you know, I think this is an
17 issue that has been worthwhile and
18 productive collaboration with EPA, so
19 as far as light fixtures go, that's
20 going to approximately be a billion
21 dollars, give or take, before we
22 replace all of the lights in all the
23 schools by December 2016.

24 MS. LONEY: If there are no
25 further questions, we're going to

1 close the session.

2 If you can go back to the
3 previous screen. I want to remind
4 everyone that the comment period
5 closes on June 30th. You can send
6 your comments to James, or as we like
7 to call him, Jim Haklar, USCPA, 2890
8 Woodbridge Avenue, Building 10,
9 Edison, New Jersey 08837. Or to make
10 it easier on yourself, you can e-mail
11 your comments to
12 PCBsPreferredRemedy.Region2@EPA.gov
13 Again, the deadline is June 30th. We
14 will be having two more meetings on
15 this issue. One next Thursday --

16 MR. HAKLAR: One on Monday.

17 MS. LONEY: One on Monday in
18 Staten Island and one on Wednesday in
19 Brooklyn. All right. So thank you
20 everyone for coming and maybe I will
21 see you in Staten Island or Brooklyn.

22 (Time noted: 7:33 p.m.)

23

24 I N D E X

25 -----

COMMENTS / QUESTIONS / ANSWERS

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FOR ID.

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MR. HUNT 9

MR. MADDALONI 31, 36, 37, 40, 43, 45, 46

MR. EVANGELISTA 35

MS. SHEPARD 31, 32, 34, 52

MS. BERRY 33

MS. GIORGI 35, 36, 47, 49

MS. LADY 40, 43, 44, 45

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